WHAT IS CLAIMED IS:

1. A process for converting carbonaceous feedstocks into energy without the production of unwanted greenhouse gas emissions comprising:

(a) converting a carbonaceous feedstock selected from the group consisting of coal, hydrocarbon oil, natural gas, petroleum coke, oil shale, carbonaceous-containing waste oil, carbonaceous-containing medical waste, carbonaceous-containing hazardous waste, carbonaceous-containing medical waste, and mixtures thereof and a greenhouse gas stream in a gasification unit to synthesis gas comprising carbon monoxide and hydrogen, said gasification unit is a non-catalytic high temperature, gas-phase reactor operating at conditions to achieve a gas exit temperature of from at least 700° to about 1600°C (1300-2900°F);

(b) electrochemically oxidizing at least a portion of said synthesis gas from said gasification unit in a first half-cell of a fuel cell (anode) to a first half-cell exit gas comprising carbon dioxide and water;

(c) recovering the carbon dioxide from said first half-cell exit gas to serve as at least 20 % of said greenhouse gas stream in step (a); and

(d) electrochemically reducing an oxygen-containing gas in a second half-cell of said fuel cell (cathode) completing the circuit and resulting in the production of electrical energy.

2. The process of Claim 1 wherein said greenhouse gas stream is carbon dioxide.

3. The process of Claim 1 is used as in electric power producing fossil fuel plant.

4. The process of Claim 1 is used in a petroleum refinery.

5. The process of Claim 1 is used in a petrochemical plant.

6. The process of Claim 1 wherein said gasification unit contains a rotary kiln.

7. The process of Claim 1 wherein a portion of said synthesis gas

from said gasification unit is converted in a chemical reactor into useful hydrocarbon products.

8. The process of Claim 7 wherein said chemical reactor is a Fischer-Tropsch reactor.

9. The process of Claim 1 wherein a major portion of the water is condensed from said first half-cell exit gas using a condenser.

10. The process of Claim 9 wherein CO_2 and at least a portion of the condensed water is passed to said gasification unit in an amount to adjust the hydrogen to carbon ratio of the combined carbonaceous feedstock and greenhouse gas stream is sufficient to result in a synthesis gas having an optimum ratio for the Fischer-Tropsch reactor.

11. The process of Claim 10 wherein said synthesis gas has a hydrogen to carbon ratio in the range of about 1.2 to about 1.75.

12. The process of Claim 1 wherein the amount of greenhouse gas stream is adjusted in step (a) so that the combined carbonaceous feedstock and greenhouse gas stream to said gasification unit has a hydrogen to carbon monoxide ratio in the range of about 1.2 to about 1.75.

13. The process of Claim 1 wherein the oxygen-containing gas in step (d) is air and the nitrogen portion as a result of the electrical reduction is exited into the atmosphere.

14. The process of Claim 1 wherein said first half-cell of said fuel cell contains an electrolyte surrounding a porous catalytic anode electrode.

15. The process of Claim 14 wherein said second half-cell of said fuel cell contains an electronically conducting electrolyte surrounding a catalytic cathode electrode.

16. The process of Claim 15 wherein said first and second half-cells of said fuel cell are separated by an ionically conducting membrane that will not allow passage of components from the respective half-cells.

17. A system for converting carbonaceous feedstocks into energy without the production of unwanted greenhouse gas emissions which comprises:

(a) a gasification unit containing a non-catalytic high temperature, gas-phase reactor and having inlet means for a carbonaceous feedstock selected from the group consisting of coal, hydrocarbon oil, natural gas, petroleum coke, oil shale, carbonaceous-containing waste oil, carbonaceous-containing medical waste, carbonaceous-containing hazardous waste, carbonaceous-containing medical waste, and mixtures thereof and a greenhouse gas stream operating at conditions to achieve a gas exit temperature of from at least 700° to about 1600°C (1300-2900°F) for converting a combined feedstock into synthesis gas comprising carbon monoxide and hydrogen and an outlet for the synthesis gas;

(b) a fuel cell for the production of electrical energy comprising a first half-cell having an inlet in fluid communication with the synthesis gas and first means for electrochemically oxidizing synthesis gas into a first half-cell exit gas of carbon dioxide and water, a second half-cell having second means for electrochemically reducing an oxygen-containing gas, and a membrane separating said first and second half cells that will not allow passage of components from the respective half-cells; and

(c) passage means for passing the carbon dioxide from said first half-cell to serve as a greenhouse gas stream for said gasification unit.

18. The system of Claim 17 wherein the greenhouse gas stream is carbon dioxide.

19. The system of Claim 17 wherein said gasification unit contains a rotary kiln.

20. The system of Claim 17 further comprising a chemical reactor in fluid communication with said gasification unit to convert a portion of said synthesis gas from said gasification unit into useful hydrocarbon products.

21. The system of Claim 20 wherein said chemical reactor is a Fischer-Tropsch reactor.

22. The system of Claim 21 wherein a condenser is used to condense a major portion of the water from said first half-cell exit gas.

23. The system of Claim 22 wherein the CO_2 and at least a portion of the condensed water is passed to said gasification unit in an amount to adjust the hydrogen to carbon ratio of the combined carbonaceous feedstock and greenhouse gas stream sufficiently to result in a synthesis gas having an optimum ratio for the Fischer-Tropsch reactor.

24. The system of Claim 23 wherein said synthesis gas has a hydrogen to carbon ratio in the range of about 1.2 to about 1.75.

25. The system of Claim 21 wherein the amount of greenhouse gas stream is adjusted in step (a) so that exit gas stream of said gasification unit has a hydrogen to carbon monoxide ratio in the range of about 1.2 to about 1.75.

26. The system of Claim 17 wherein the oxygen-containing gas is air and the nitrogen formed as a result of the ionic reduction is exited into the atmosphere.

27. The system of Claim 17 wherein said first half-cell of said fuel cell contains an electrolyte surrounding a porous catalytic anode electrode.

28. The system of Claim 27 wherein said second half-cell of said fuel cell contains an electronically conducting electrolyte surrounding a catalytic cathode electrode.

29. A system for converting carbonaceous feedstocks into energy without the production of unwanted greenhouse gas emissions which comprises:

(a) a gasification unit containing an indirectly heated rotary kiln and having inlet means for a carbonaceous feedstock selected from the group consisting of coal, hydrocarbon oil, natural gas, petroleum coke, oil shale, carbonaceous-containing waste oil, carbonaceous-containing medical waste, carbonaceous-containing hazardous waste, carbonaceous-containing medical waste, and mixtures thereof and a greenhouse gas stream, a gas exit means, and a solids exit means between the inlet means and the exit means operating at conditions to achieve a gas exit temperature of from at least 700°

to about 1600°C (1300-2900°F) for converting a converting the combined feedstock into synthesis gas comprising carbon monoxide and hydrogen and an outlet for the synthesis gas;

(b) a fuel cell for the production of electrical energy comprising a first half-cell having an inlet in fluid communication with the synthesis gas and first means for electrochemically oxidizing synthesis gas into a first half-cell exit gas of carbon dioxide and water, a second half-cell having second means for electrochemically reducing an oxygen-containing gas, and a membrane separating said first and second half cells that will not allow passage of components from the respective half-cells; and

(c) passage means for passing the carbon dioxide from said first half-cell to serve as a greenhouse gas stream for said gasification unit.

30. The system of Claim 29 wherein said gasification unit further comprising a superheater means for superheating the exit gas to a temperature in the range from at least 700° to about 1600°C (1300-2900°F).

31. The system of Claim 30 wherein said gasification unit comprises said indirectly heated rotary kiln having said inlet means for said carbonaceous feedstock, said gas exit means, and said solids exit means, and having said superheater operably positioned at least partially within said kiln in the region adjacent to the gas exit means.